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ABSTRACT

In this paper it is suggested that current research methods are of questionable validity as they pertain to minorities, but that this problem may be solved by encouraging more minority input into the conceptualization, organization, and implementation of surveys that affect them. All phases of survey research are discussed in detail. Planning objectives, hypothesizing, and writing up a problem statement are explained. Methods of designing the sample and the instrument in a way which will obtain the desired information without excluding certain subpopulations are outlined. Data collection and analysis procedures are explained in light of quality control factors and possible researcher biases. A few guidelines for report writing and investigator responsibility are outlined. (WI)

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INCREASING MINORITY PARTICIPATION IN RESEARCH AND DEVELOPMENT
THROUGH SURVEY RESEARCH METHODOLOGY

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The specific applications of survey research range from highly pragmatic public opinion polls and market research studies to highly theoretical analysis of social influence. Many planners and administrators have used surveys as a rapid and effective means of gathering baseline information for policy decisions. For decades the primary sources of this information were the census and administrative statistics such as those growing out of the customs and taxation records. Today, governments often supplement these data with surveys about population matters, unemployment, income, housing, migration, education, public health and other policy related areas.

Social and behavioral scientists have applied survey research and descriptive research techniques to an even broader range of theoretical and practical problems. Among these are voter behavior, psychological influences on spending and saving behaviors of consumers, attitudes, values and belief systems, beliefs related to economic growth, political and economic issues, correlates and incidence of mental health and illness. Furthermore, demographers and other population researchers have developed a special application known as KAP (Knowledge, Attitude, Practice) surveys.

The efforts of social and behavioral scientists in survey research is typically aimed at measuring social phenomenon, discovering social regularities, justifying current conditions and practices, creating social theories that ultimately assist decision-makers in planning and modifying programs. These surveys may be broad or narrow in scope depending on the nature and available information about the problems.

The U.S. Bureau of the Census is best known for its decennial attempt

to enumerate the U.S. population. Although this agency has contributed much to the development of standardized definitions, sampling, and methods of implementing surveys in the field, the bureau has rightly been criticized consistently for its inaccurate accounting of minorities, especially blacks. Large scale surveys are also conducted by Commercial polls such as those organized by George Gallop, Elmo Roper, and more recently Louis Harris. Some of the other more prominent centers in the United States are the Survey Research Center at the University of Michigan, the National Opinion Research Center at the University of Chicago, the Bureau of Applied Social Research at Columbia University, and the Survey Research Center at the University of California. While all of these large institutions and agencies are either making or have the power to make significant definitive statements concerning status, these agencies typically lack the input from minority investigators representing specific concerns. Hence, the political parameters within which problems are usually defined are devoid of minority perspectives.

The National Institute of Education is aware of the under-representation of minorities within educational research and development. Its concern has led this agency to initiate a program aimed at increasing participation of minorities in educational knowledge production and utilization fields. The few minority behavioral scientists who have received research training come from a variety of disciplines. The majority of them are graduates of education, psychology, and sociology. The elements necessary to effectively conduct a survey are typically discussed in a piecemeal fashion across several courses taken during graduate studies. This paper attempts to

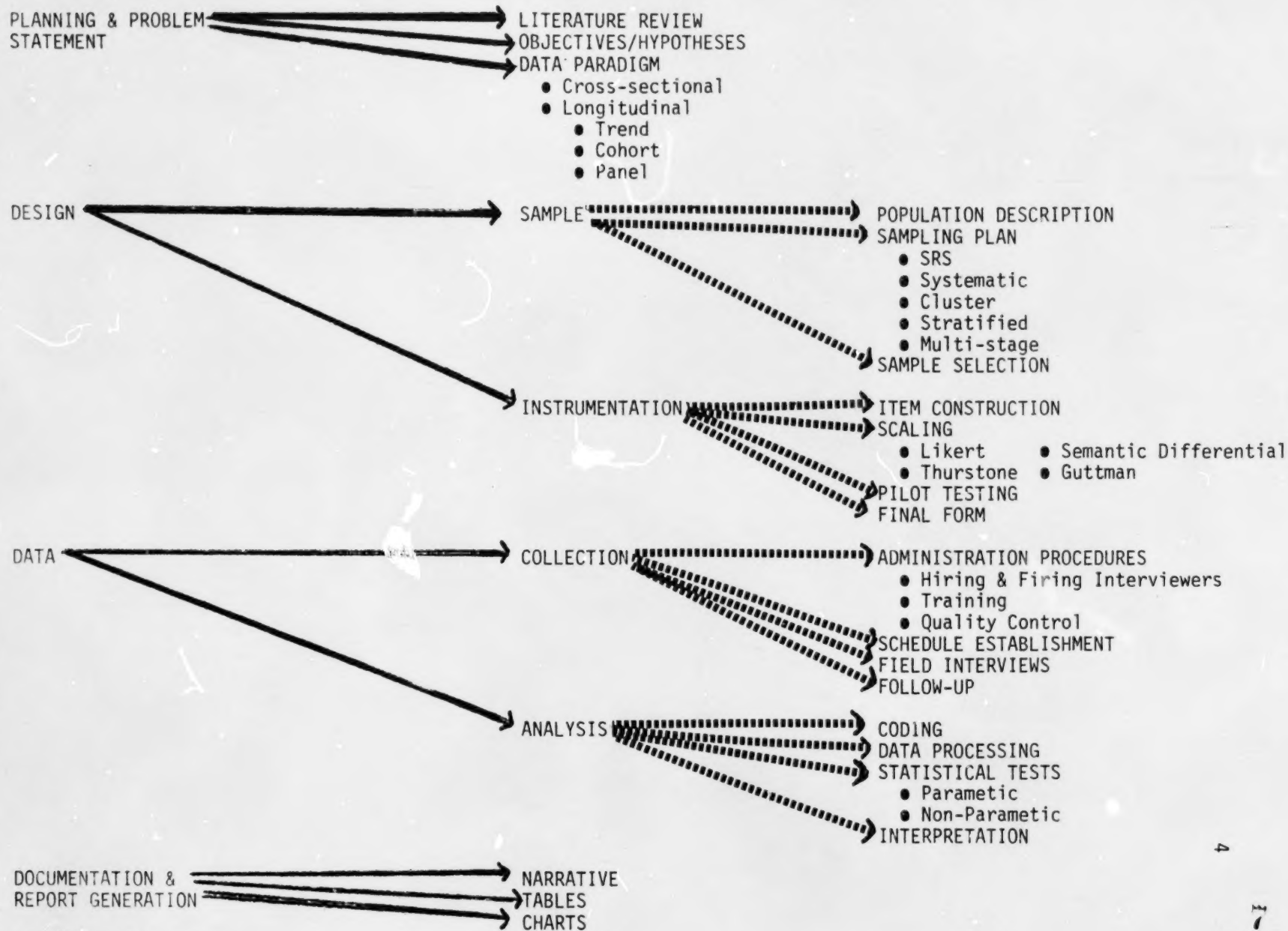
summarize the macro elements or major questions which should be raised during the survey research process.

Initially, it is important to recognize the politics of problem definition. The context which problems are defined will have a direct bearing on the kinds of questions and solutions that are ultimately identified. Therefore, it is my considered opinion that minority investigators must begin to maximize efforts aimed at defining the parameters in which problems exist, and ultimately defining the questions to be raised within the confines of survey methodology. Essentially, survey methodology is concerned with identifying the status of given phenomenon within the society or population. The interest is in identifying "what is" phenomenon.

While survey research has been identified as using both "quick and dirty" techniques and not being as scientifically rigorous as some other methodological designs, i.e., experimental research; it is important that investigators have a good descriptive grasp of variables prior to implementation of true experimental designs. In too many cases, experimental research has been conducted prematurely without the benefit of strong descriptive and operational definitions. The role of the investigator doing survey research is to ascertain an accurate description of key variables and phenomenon.

The remainder of this paper will address the organization and description of major aspects of a large scale research project. More specifically, four major areas will be discussed: (1) planning and problem statement, (2) sample and instrument design, (3) data collection and analysis, and (4) documentation and report generation. Furthermore, this paper was developed with an awareness of the specific requirements generally listed by federal and governmental agencies in their Request For Proposals (RFPs).

TABULAR WORK BREAKDOWN FOR SURVEY PROJECT



Phase I - Planning and Problem Statement

The planning process usually begins with an investigator or team of investigators collaborating on an identified problem or problems yet to be identified within a particular discipline. In keeping with the notion that all research is problem oriented or involves a problem solving process, once the investigator has decided what the problem is, relative to the anticipated investigation, he or she is in a better position to evaluate what data is needed. During the planning process, the research will typically delineate goals, objectives, data parameters, hypotheses, review of literature and strategies for obtaining and analyzing data. The planning process is usually one of the longer phases within a full-scale survey. This covers the period from conceptualization to the writing of the proposal and culminates formally at the time funds are available for project implementation. During this phase, the investigator will initially attempt to determine how much is known about the variables or the phenomenon within the proposed study. If there is limited knowledge about the phenomenon under study, this may suggest a particular design strategy. This assumes that the investigator has ascertained whether or not the needed information is currently in existence in some organized body or form by reviewing pertinent literature. If the data is already organized and summarized, then the need for the proposed survey may not be justified. On the other hand, if information does not exist then a survey may indeed be in order. The investigator attempts to make decisions regarding categories of information needed to carry out the survey. Such relevant concerns may include discussions regarding exploration and clarification of data, description of phenomenon, causal explanations and hypotheses testing.

Within this phase, objectives and hypotheses are developed. Survey objectives or hypotheses are advanced in keeping with the basic paradigm (cross-sectional vs. longitudinal). If the investigator is more interested in one time data, then a cross-sectional design will be most appropriate. Conversely, if the investigator is interested in looking at change over time, the longitudinal design is applicable. Within the longitudinal design, the investigator discusses specific design features such as trend, cohort, and panels. Before the objectives can be clearly worked out, the investigator has to make a decision regarding whether or not he or she is interested in ascertaining information about the entire population or a representative sample of the population. If the investigator wants to do a population survey, or census, then he/she must be in a position to enumerate and list all elements within the population. If there is a complete listing, the investigator is ready to determine the survey objectives. If there is not a complete listing of all elements within the population, the investigator needs to discuss a strategy for developing the population frame (listing). Upon development of a suitable and more accurate population frame, the investigator is ready to determine the survey objectives. Essentially, the survey objectives and hypotheses guide the remainder of the study.

During this phase the investigator also begins to project and identify human and other resources needed to carry out the proposed study. The resources necessary to effect a longitudinal study will typically outweigh those involved in doing cross-sectional research. Longitudinal studies increase the opportunity for investigators to make strong inferences and generalizations over time. But the pitfalls and constraints related to subject mobility and mortality must be considered during this planning process. Within the confines of the data paradigm, a longitudinal study

offers a number of design options. More specifically, within a Trend study, the population is defined very generally; for example, American voters or the American public. The same population is sampled at different points in time. The sampled subjects usually change with data points; however, they represent the same generalized population. For a Cohort study or design, the same specific population is sampled at different points in time. Classmates are candidates for this type of study. Within the Panel design, the same specific subjects are sampled at different points in time. Such a design is typically plagued with issues of mobility and mortality of the subjects.

Hypothesizing involves investigators advancing tentative statements of expectant relationships between two or more variables and then setting out to collect data regarding the variables within the hypotheses. Once the hypotheses and the study objectives have been developed, the investigator can specify the data requirements for answering the questions within the hypotheses or objectives. This requires a conceptual elaboration of the research design. The research design may have one or more of the following data requirement specifications: (1) exploration, (2) clarification, (3) description, (4) causality, (5) hypotheses testing, (6) evaluation, (7) predicting or forecasting, and (8) development of social indicators. All of these issues are discussed during the planning phase of the survey and in part, direct the focus of the design and analysis strategy. During this phase of the study, the investigator also outlines administrative plans and questions related to ethical and potential political ramifications. The status of measurement instruments for assessing the variables under study may also receive initial attention during this phase.

Phase II - Designing the Sample and the Instrument

● Sample

The success of any research design is dependent upon a specific definition of the population or universe, using succinct terminology and very precise language. An understanding and appreciation of this fact is particularly germane and critical to survey research design. Once the specific universe has been identified and verbalized precisely, the investigator can then begin to design a sampling plan for selecting subjects for participation in the study. Several major decisions have to be addressed at this stage of the survey implementation. These include whether or not the investigator will use a probability sampling strategy vs. a non-probability sampling strategy. In the probability sampling strategy, each element has a known or equal chance of being selected from the population frame. Conversely, those elements identified under the rubric of non-probability sampling have a nonrandom chance of selection for the sample. These non-probability sampling strategies do not provide internal estimates of variability. Such samples include: first, chunk or fortuitous samples in which the sample occurs at one time only. These samples are sometimes identified as haphazard collections and are made up of individuals who are casually or conveniently available. An example is students enrolled in a class or people passing on a street corner. Such samples generally do not permit generalizations beyond the collections themselves and are seldom of scientific interest.

Second, judgmental or purposive samples represent elements chosen from the population by interviewers or other field workers using their own discretion about which information informants are "typical" or "representative".

This technique is closely linked to the expert testimony notion. Third, is a quota selection procedure involving elements chosen in the field by interviewers or other field workers using prearranged categories of sample elements. The goal is to obtain a predetermined number of cases in each category. Quota sampling was a popular technique used by some major institutions during the late 60s and early 70s in efforts to increase admittance of minority students to the universities. Finally, expert sampling is a process in which elements are chosen on the basis of informed opinion in which the views are held to be representative of the population in question. For example, a specialist in secondary education in the United States may decide that four schools across the country adequately represent the range of variations seen in teaching methods.

Anoter or second broad category of sampling can be identified as probability sampling strategies. These strategies usually involve one or more of the following: (1) simple random sampling, (2) systematic sampling, (3) cluster sampling, (4) stratified sampling, and (5) multi-stage cluster sampling. All are probability sampling strategies in which there is a known or equal chance of elements being selected for the sample. While it is beyond the scope of this presentation to discuss the advantages and disadvantages of these various sampling strategies, it is important to recognize that within each, various allocation schemes can be used to more succinctly address the survey objectives and the purposes of the research. More specifically, proportional, equal and optimal allocations schemes can be used to augment and increase the representativeness of various sub-populations within the sample design.

● Instrument Design

While the investigators are in the process of developing and designing the sample, activities related to the identification and construction of instruments are usually carried out simultaneously with sampling design activities. If available instrumentation for measuring the variables within the hypotheses or survey objectives can be identified, the investigator's task has been minimized. However, the typical case suggest that instruments are not available for measuring key variables within a study. Therefore, the investigator usually has to design a questionnaire or interview schedule for purposes of data collection. Within the confine of questionnaire design, the investigator is concerned with translating his or her research objectives into viable questions. Four categories or types of questions can usually be found in these instruments. They are (1) factual questions which involve information related to the environment, personal characteristics or the demography; (2) informational questions or those that address the acquisition of knowledge about a particular phenomenon; (3) self-perceptive questions which usually address a past or present behavior; and (4) attitudes and opinion related questions.

In order for the behavioral scientist to be effective, he or she must be familiar with multiple theoretical models for developing attitude scales. Familiarity with attitude scaling techniques will facilitate and enhance the repertoire from which the investigator can choose the most appropriate scaling technique. The Likert technique seems to be the most popular, followed by the Thurston technique, the Guttman scale, Semantic Differentials and Q-sorts. All of these scaling techniques require technical training, usually at the graduate level. Concerning other related questions, the investigators has

to decide how much structuring of questions is necessary. Issues of open and close-ended questions must be addressed. Questionnaire length and the burden placed on the respondent are of considerable import as well as issues related to increasing response rate, response bias, and cost.

After the investigator has identified global areas in which questions are to be developed, an initial draft questionnaire is prepared. This questionnaire may be modified several times prior to pilot or field testing. During the field testing period, it is typical to ask more open-ended questions which later become close-ended questions during the full-blown study. The investigator can field test the entire questionnaire or parts of the questionnaire. Furthermore, he/she can field test the cover letter or a specific procedure related to collecting the data.

However, the primary purpose of pilot testing is aimed at improving the instrument and improving the sensitivity in which the questions address the survey objectives and/or hypotheses. After a suitable and comparable environment for a pilot sample has been identified for field testing, the results of the pilot study can be used to improve and strengthen the final questionnaire. It should be kept in mind, however, that pilot tests should also be used, not only to evaluate the questionnaire items, but also to test the adequacy of the sampling instructions, the quality of the interviews, the likelihood of controversy arising from the survey, the rate and reasons for refusals, the cost and length of interview (including callbacks), and the overall appropriateness of the survey method to the problem at hand. Pilot testing usually involves between 20 to 50 interviews.

Phase III - Data Collection and Analysis

● Data Collection

Prior to sending interviewers into the field for data collection, the principal investigator has the task of implementing several administrative procedures. For large scale surveys, the principal investigator will have to recruit and select interviewers. This usually involves taking applications, conducting personal interviews, sometimes administering psychological tests, and requesting letters of reference.

In recognition that each survey instrument differs from every other, interviewers must be retrained for implementing each new survey. Hence, the amount of time required for such training depends on the scope and nature of the survey and the relative experience of interviewers. Furthermore, the type and intensity of training will depend on the goals of the study, the number of interviewers, their previous experience, the availability of time, and difficulty of the questionnaire. Thus, the total time needed for training may range from two hours to three weeks of intensive effort. Training is followed by interviewers practice sessions in which they implement the interview under supervision.

Every survey should include quality control factors aimed at preventing falsified interviews and reducing contamination of data by interviewer bias. The problem of falsification is sometimes overplayed in criticisms of survey research, but it is a real danger nonetheless. Various techniques have been used to detect falsification. Often their value is in deterrence. The most commonly suggested approach is a re-interview of the sample by someone other than the original interviewer. A simpler device uses postcard followup

to individuals presumably interviewed in the study. Quality control may also consist of telephone validation checks.

The principal investigator now establishes an interview schedule which frequently may involve alerting selected subjects in advance of the pending survey study. Interviewers are then sent into the field to conduct the interview. Sending the now well-trained, well-briefed, and well motivated interviewers into the field requires maximum coordination by the principal investigator or supervisor.

Each interviewer should be prepared to overcome several difficulties commonly arising in the first stages of the interview. These include protests of disinterest, suspicion, skepticism, and outright refusals. These types of responses may require some followup or callbacks on the part of the interviewer. Callbacks are required in order to obtain as many responses as possible from those persons selected for the sample. If no callbacks are made, the sample will disproportionately reflect people who are at home most of the time, such as housewives and retired persons. Problems related to inaccessibility and lack of response by the proper respondent can seriously taint the result of a study. In the case of refusals, it is important for the interviewer to make an effort to identify the characteristics and the reasons for subject refusal to participate.

- Data Analysis

After the data has been collected, the staff is now in the position to edit and code responses to the instrument. This is a very important phase of implementing the survey since the staff will be transferring numbers and information from completed questionnaires or interviews to a coded IBM sheet. Bias and distortion can readily creep into the reaserach during the

process of transferal of information from one source to another. Therefore, it is important to emphasize systematic completeness and double-checking the transferal of information from questionnaires or interview schedules to coding sheets. Sometimes questionnaires are precoded and coding becomes simplified. For other questionnaires and interview schedules, coding is done after the data is collected.

After coding, the data is ready for keypunching and verification. After verification has taken place, the punched cards and the data should be reviewed once again in an effort to identify, modify, or eliminate any obvious errors. No matter how carefully the data has been transferred to IBM cards, some errors may result from incorrect coding, incorrect reading of written codes, incorrect sensing of blackened marks, and so forth. Even keypunch verification is not perfect. Essentially, this aspect of the data processing involves the final cleaning of the data.

The principal investigator is now positioned to write an analysis or computer program for answering major questions within the survey objectives or hypotheses. An initial analysis strategy always involves computing the response rate. The response rate is the proportion of the eligible respondents in the sample who were successfully interviewed. Other simple descriptive and con-descriptive techniques will typically involve ascertaining frequency distributions for all variables, computations of proportions or percentages, measures of central tendency, measures of dispersion, two- and three-way cross-tabulation measures of correlation and regression.

Furthermore, the investigator needs to identify inferential techniques or analysis strategies to be used for hypotheses testing. More specifically, the analysis may involve parametric and nonparametric analysis techniques

depending on the scaling characteristics of selected variables (nominal, ordinal, interval, and ratio). The investigator should keep in mind the different assumptions which should be met prior to implementing a particular parametric or nonparametric test of significance.

While most of the analysis will involve primary data, secondary analysis sources are sometime identified during the literature search. Previously identified populations parameters are typically important measures against which to test the newly collected data. A widely used analysis package is the Statistical Package for the Social Sciences (SPSS) which is a pre-coded computer program that has the capacity of handling and managing up to 500 variables within a single set of data as well as executing a large array of analysis procedures and subroutines.

After the investigator has compiled and debugged the program, he or she is now ready to interpret the output. Interpretation requires previous training in statistical analysis technique and an understanding of both descriptive and inferential statistics.

Phase IV - Documentation and Report Generation

The final major step in completing a survey is the writing of a final research report. Scientific reporting has several functions. First, the report communicates to an audience a body of specific data and ideas. The same report should provide those specifics clearly and with sufficient detail to permit an informed evaluation. Secondly, a scientific report should be viewed as a contribution to the general body of scientific knowledge while remaining appropriately humble. The investigator should always regard his research report as an addition to what is known about the phenomenon. Finally, the report should serve the function of stimulating and directing further inquiry.

This phase of the study involves development of tables and charts accompanied by a narrative explanation. In any rigorous survey, the investigator should be more familiar with the technical shortcomings of the study than anyone else, and he or she should make these shortcomings known to the readers.

In the final analysis, the quality and value attached to survey research is only as significant as the amount of thorough planning, organization, execution, and adherence to established procedures and principles insisted upon by the principal investigator. The difference between a great or significant research document and the pedestrian is not the amount of effort expended, nor the time; it is in the systematic attention to detail.

Much of the current research, at best, has questionable validity as it pertains to minorities. It falls within the realm of the pedestrian since it lacks input from the affected population. This trend will continue to the detriment of blacks and other minorities until such time as minorities seek and secure significant input to conceptualization, organization, and implementation of research affecting these subpopulations. But such input must be organized to meet rigorous professional and methodological standards.

An increase in minority participation in knowledge production and utilization is one way of assuring that decision-makers have access to more comprehensive scientific data when the quality of life and subsequent planning for societal improvement are at stake.